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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,843	06/27/2001	George H. Flammer III	011727-78.00US	3725

7590 03/29/2005

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EXAMINER

HEINRICHS, CHRISTOPHER P

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/894,843	<b>Applicant(s)</b> FLAMMER, III	
	<b>Examiner</b> Christopher P. Heinrichs	<b>Art Unit</b> 2663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/27/2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20030528</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because:

- a. reference character "16" of Fig. 1 has been used to designate both "Backbone" and "PRP Group".
- b. reference character "22" of Fig. 1 has been used to designate both a PRP group with radio modems and a PRP group with only poletops
- c. they do not include the following reference sign(s) mentioned in the description: "6B-7" should be in Fig. 6B and point to the flowchart decision "Heard Data Packets?", as described in description page 11, line 11

2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

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corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:
4. Page 8, lines 30-33 contain an unclear sentence. Applicant should consider separating this sentence into two or more sentences. Lines 30-33 may be altered to read -- The node then determines if it is still in poll-request mode. If not, it proceeds to transition Step D if it is still under contention. For instance, if multiple clients have just requested to transmit data to it in this PRP cycle, then the node stays in PRP mode. --
5. Page 9, line 4 contains the heading "DESCRIPTION OF FIELDS IN PACKETS," but the subsequent description, while referring to the figures of the packets (figs. 3A-3C), contains no description of the fields within each packet. Applicant should consider revising this heading.
6. Page 10, line 5 reads "When it continues..." This is inconsistent with fig 5C but can be made clear if changed to "When it does equal..."
7. Page 10, line 9 reads "Referring to Fig. 5..." and should be changed to "Referring to Fig. 5D..."

8. Page 11, line 6 refers to a "Broadcast response Packet" and a drawing (fig. 6B-1) that includes a "Broadcast Resolution Packet." Change text on page 11, line 6 to read - Broadcast Resolution Packet-.

9. Page 11, line 1 states "the client listens for the and if it doesn't..." It is assumed based on the drawing referred to (fig. 6A-5) that this line should read "the client listens for the Broadcast Poll Request Packet and if it doesn't..."

10. Page 11, lines 16-17, reads "Checking to see if any packets are left to be sent by the server (6C-6)..." but figure 6C-6 reads "Any packets left to send to server?"

Appropriate correction is required.

### ***Claim Objections***

11. Claims 2 and 6 are objected to because of the following informalities:  
inconsistent terminology by use of "congested node" and "controlling node" as can be read in line 7 of claim 2 and line 6 of claim 6. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claim 2, 3, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Both claims 2 and 6 state that “requests of optimally transmitting data between the controlling node and the requesting node” are sent from the controlling node to the requesting node. The direction of flow of the “requests” described by the claims render the claims unclear, and it is believed that the applicant intended the “requests” to be sent from the requesting node to the controlling node, as that direction of flow of the “requests” makes the claims clear. Claims 2 and 6 will be considered with the substitution noted above. Appropriate correction is required.

15. The preamble of claim 3 states “The method of claim 2 further including thereafter:” where “thereafter” is a transitional term setting forth the requirement that the method steps of claim 3 be subsequent to the method steps of claim 2. However, the method steps of claim 2 (which depends on claim 1) and claim 1 are not ordered. It is therefore unclear which steps of claim 2 and claim 1 that the steps of claim 3 is intended to follow.

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16. Claims 3 and 7 both contain phrases with ambiguous meanings. Both claims contain the phrase "receiving at each individual requesting node acknowledgments of corresponding individually transmitted data packets from the controlling node." It is clear that the requesting node receives acknowledgments. However, the phrase can mean either that the acknowledgements are received from the controlling node in response to individually transmitted data packets (where they are transmitted from is not specified) or that the acknowledgements are received from an unspecified source in response to individually transmitted data packets from the controlling node. Of the two interpretations the former will be considered, but the language should be revised. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent #5,297,144 to Gilbert et. al.

19. With regard to claim 1, Gilbert teaches a wireless multipoint data communications system comprising a central station and a number of remote stations

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(col. 5, lines 29-31, and fig. 1). The central station is equivalent to the congested communication node of the instant claim and any one of the remote stations is equivalent to the requesting node of the instant claim. The reservation sync (RS) frame transmitted to all the remote stations and defining the start of a number of time slots (col. 7, lines 35-38, and fig. 3, item 52) reads on the broadcast poll request packet of the instant claim. Since a remote station taught by Gilbert has a preassigned waiting period that begins upon the reception of the reservation sync frame (col. 7, lines 40-42), it necessarily withholds its requests for access to the central station while awaiting receipt of the RS frame. Finally, after receipt of the RS frame, the remote station issues a reservation request (RR) frame (col. 7, lines 46-47 and fig. 3, item 53) for access to the central station, which is the same as the poll packet requesting access to the congested node of the instant claim.

20. With regard to claim 2, the broadcast packet that is operative to request poll signals is the same as the RS frame sent transmitted to all remote stations. The remote stations taught by Gilbert issue RR frames (poll signals) after being prompted by the RS frame if they have data to transmit on the channel (desire resources) to the central station (controlling node) (col. 7, lines 46-48). These RS frames taught by Gilbert are requests from the remote stations of optimally transmitting data between the controlling node and the requesting nodes of the instant claim. Since the RS frames taught by Gilbert have information (fig. 2, item 40, and col. 6 lines 51-68) that signal the beginning of a preassigned waiting period for every remote station after which the remote stations



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send RR frames, the RS frame directs the remote stations when to send their RR frame data. Subsequent to the waiting periods the central station sends polling data that is received by every remote station (col. 7, lines 63-67). Hence the RS frame directs the remote stations when to send and receive data. Finally, the above noted polling data that is received by the remote station causes the remote station to transmit data to the central station (col. 8, line 2-5).

21. With regard to claim 3, the central station taught by Gilbert generates a poll list that defines an order in which to send polling data that will be received by remote stations (col.8, lines 5-7) if the polling data is available (i.e. if a remote station made a reservation). This poll list is a schedule. An acknowledgement is sent from the central station to each individual remote station in response to data packets transmitted by the remote stations to the central stations (col. 8, line 63 – col.9 line 5, and figure 4, items 63, 67, 69). Finally, the remote stations taught by Gilbert transmit acknowledgements upon receipt of data previously transmitted to them from the central station (col. 9, lines 7-14).

22. With regard to claim 5, Gilbert teaches an apparatus (fig. 9, item 14) for requesting access to a congested communication node (fig. 1, item 12) in a mesh communication packet network (fig. 1 item 10). Gilbert teaches means for withholding (fig. 9 items 110 and 114) at a requesting node (fig. 9) requests for access to the congested communication node, broadcasting means (fig. 10, item 16) for broadcasting

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from the congested node (fig. 10) a poll request packet (fig. 4, item 52), and means (fig. 9, item 116) at the requesting node for directing from the requesting node a poll packet (fig. 4, items 53, 55).

23. With regard to claim 6, Gilbert teaches the apparatus of claim 5 as noted above, and the controlling node (fig. 10, item 12). Gilbert teaches that the controlling node broadcasts a poll packet requesting poll signals (fig. 4, item 52) from the nodes desiring the resources (fig. 1, all of items 14) of the controlling node, and that the requesting node is operative to have sent the requests (fig. 4, items 53 and 55) of transmitting data between the controlling node and requesting nodes. Gilbert further teaches means to broadcast (fig. 10, item 136) a control packet (fig. 4, item 52) from the congested (controlling) node that directs the requesting nodes when to send and receive data (sent data in fig. 4, items 53 and 55, received data fig. 4, items 60 and 64). Gilbert even further teaches means (fig. 9, items 110 and 114) to cause each individual requesting node to transmit its data packets (fig. 4, items 62 and 66) to the controlling node.

24. With regard to claim 7, Gilbert teaches the apparatus of claim 6 as noted above. Gilbert further teaches the means at the controlling node for scheduling transmitting times (fig. 10, items 130 and 134), the means for receiving (fig. 9, item 118) at each individual requesting node acknowledgements (fig. 4, items 63, 67, and 69) of corresponding individually transmitted data packets from the controlling node, and

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means for transmitting (fig. 9, item 116) from each individual requesting node further acknowledgements (column 9, lines 12-15) to receipt of data.

***Claim Rejections - 35 USC § 103***

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent # 5,297,144 to Gilbert et al. in view of U.S. Patent # 5,815,667 to Chien et al.

27. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

28. Regarding claim 4, Gilbert teaches all the aspects of the claimed invention as set forth in the rejection of claims 1-3 but does not explicitly teach the purging of data

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packets from a transmitting node upon acknowledgement of successful reception of the packets. However, Chien teaches level operations in the context of communication between networks and nodes in the background of his invention (col. 1, lines 55-58). Chien gives an example of data packet communication between a transmitting and receiving node and explicitly cites the method of purging data packets at the transmitting node after receipt of a signal acknowledging (ACK) successful reception of the transmitted data packets by the receiving node (col. 1, line 64 – col. 2, line 5). Combining the method taught by Chien and the method taught by Gilbert would produce the method of claim 4. Therefore, it would have been obvious to one normally skilled in the art at the time of the claimed invention to use the method taught by Chien for packet communication reliability, thereby ensuring reliable packet data transfer in a mesh communication packet network.

29. With regard to claim 8, Gilbert teaches all the aspects of the claimed invention as set forth in the rejection of claim 7 does not explicitly teach the purging of data packets from a transmitting node upon receipt of acknowledgement of successful reception of said data packets. However, Chien teaches means for purging data packets (fig. 5, items 500 and 510, described in col. 7, lines 56-58 and lines 64-65) from a transmitting node (fig. 5) upon receipt of acknowledgement of reception of data packets (col. 2, lines 2-5). Combining the apparatus taught by Gilbert and the apparatus taught by Chien would produce the apparatus of claim 8. Therefore, it would have been obvious to one normally skilled in the art at the time of the claimed invention to use the apparatus

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taught by Chien for packet communication reliability, thereby ensuring reliable packet data transfer in a mesh communication network.

### ***Conclusion***

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Bharghavan, "MACAW: A Media Access Protocol for Wireless LAN's", 1994, ACM SIGCOMM (London, England, UK), pp. 212-225.
- b. Fulthorp et al. (U.S. 5,893,259), System and Method for the Efficient Control of a Radio Communications Network
- c. Ramanathan et al. (U.S. 6,577,613), Method and Apparatus for Asynchronous Reservation-Oriented Multiple Access for Wireless Networks
- d. Garcia-Luna-Aceves et al. (U.S. 6,788,702), Protocol for Neighborhood-Established Transmission Scheduling
- e. Akashi et al. (U.S. 4,742,512), Multipoint Communication System Having Polling and Reservation Schemes

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Heinrichs whose telephone number is 571-272-8397. The examiner can normally be reached on Monday through Friday, 8:30am to 5:00pm.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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3/21/05